International Textile Manufacturers Federation (ITMF)

International Cotton Committee on Testing Methods (ICCTM)

Stickiness WG

Introduction

GOURLOT Jean-Paul

Bremen, March 2010

CIRAD UPR102
Laboratoire de Technologie et de Caractérisation
des fibres naturelles

Agenda of the ITMF meeting
Stickiness WG/TF

Gourlot J.-P., CIRAD

Introduction, bibliography and latest information

Gozé E., CIRAD

Measurements based on counts : variability and methods of analysis

Harzallah O., ENSISA LPMT

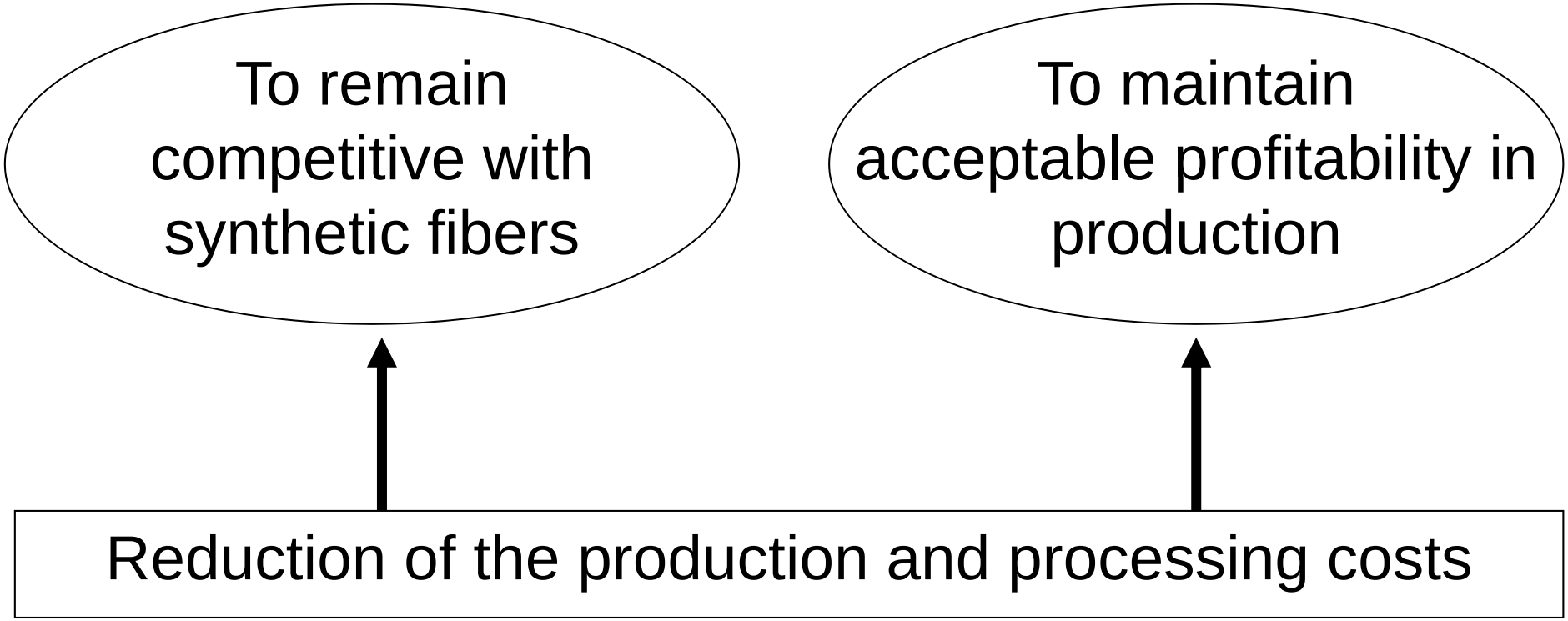
Adhesion Energy study of some Physiological and Entomological sugars

Plan of presentation

- ✓ Introduction
- ✓ Stickiness: origins
- ✓ Stickiness: measurement

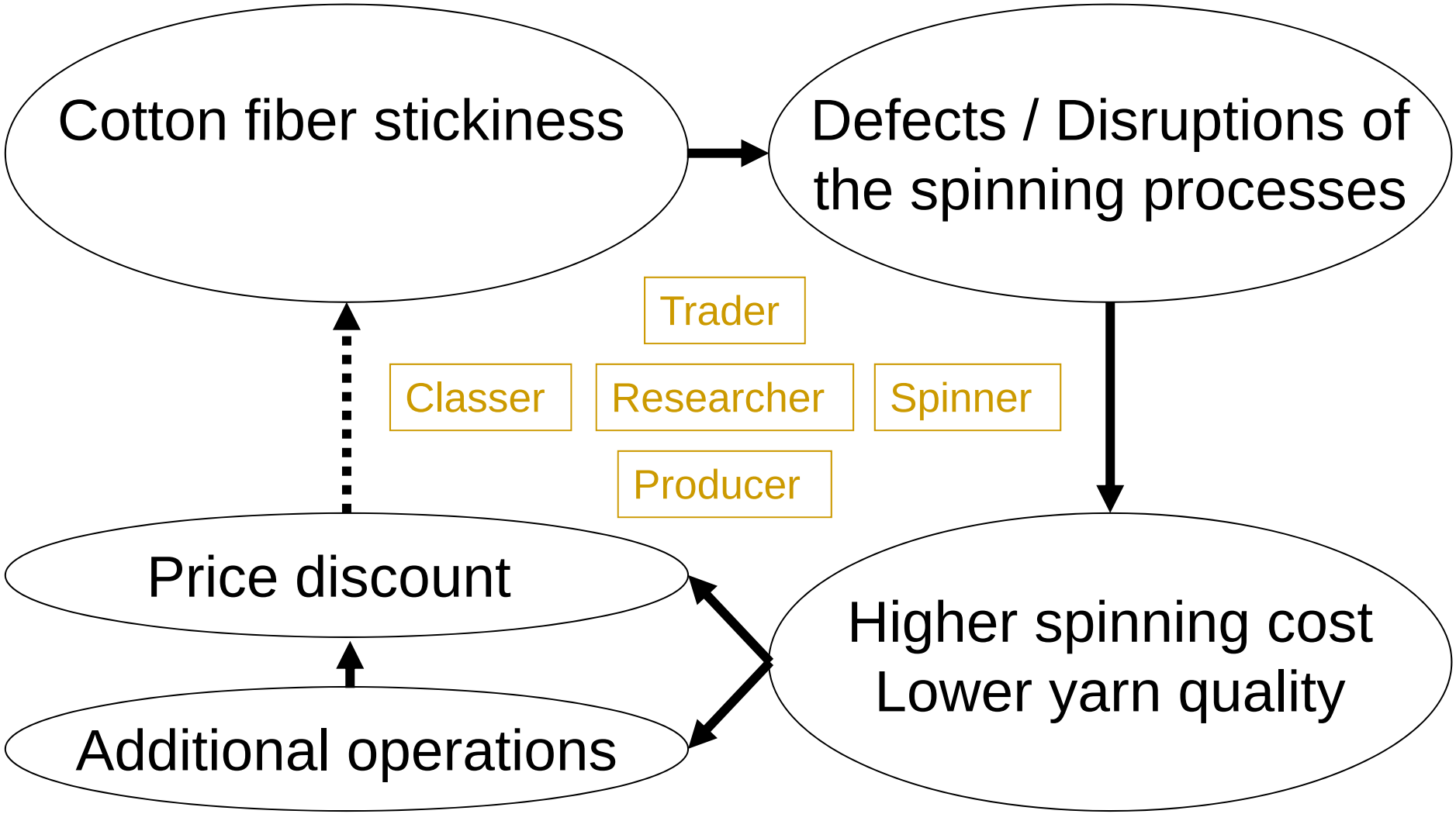
Introduction

The challenge for cotton today



Introduction

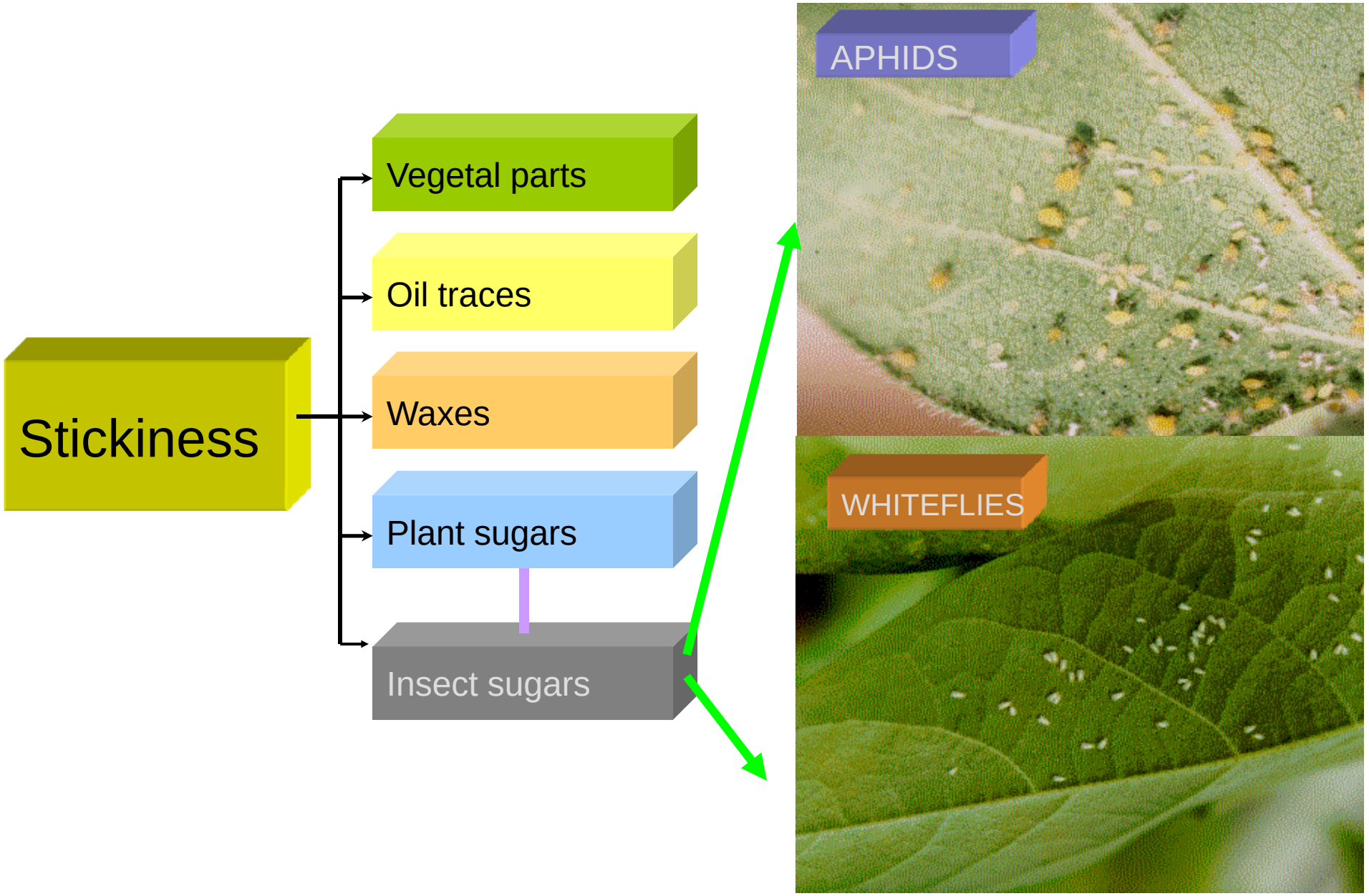
The challenge for cotton today



Plan of presentation

- ✓ Introduction
- ✓ Stickiness: origins
- ✓ Stickiness: measurement

Origins of stickiness



Origins of stickiness

Mature boll covered with honeydew

Origins of stickiness

Mature boll covered with honeydew

Origins of stickiness

Main sugars (in %) determined by HPLC in aphid, whitefly and aleurod honeydew, harvested on *G. hirsutum*

Insect	Mono-saccharides	Polysaccharides		
		Sucrose	Trehalulose	Melezitose
Aphis gossypii	25	12	1	**38**
Bemisia tabaci	19	16	**44**	17
Trialeurodes abutilonea	**44**	33	3	0

Origins of stickiness

- The most important cause of stickiness is due to these entomological sugars.
- Honeydew has now become one of the main contaminants present in cotton.
- Sticky points remain in the cotton from the field up to the spinning processes where they cause production and quality losses.
- The behavior of contaminated fibres during processing is highly dependent upon the quantity and the type of the main sugars present in fibres

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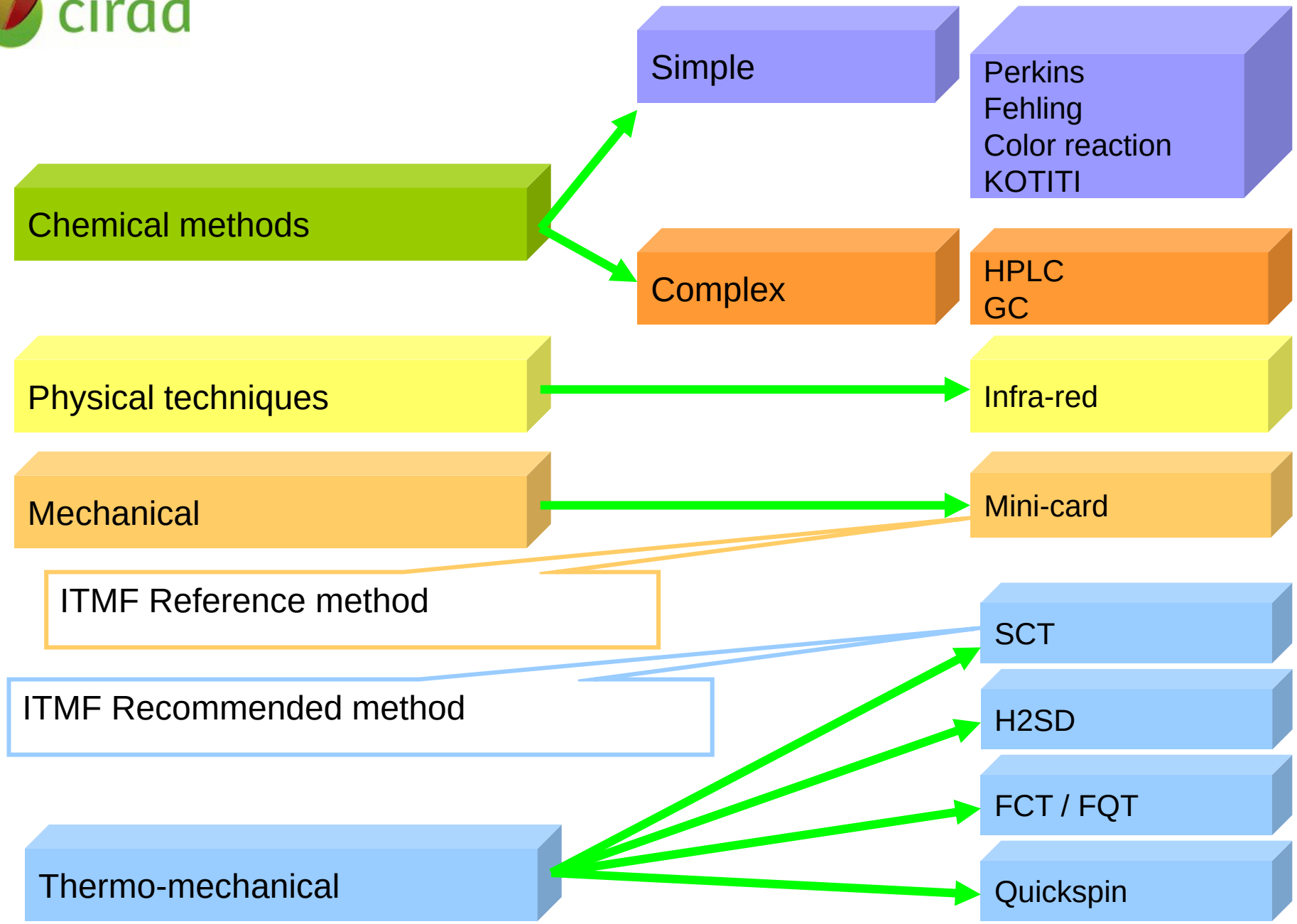
Stickiness measurement



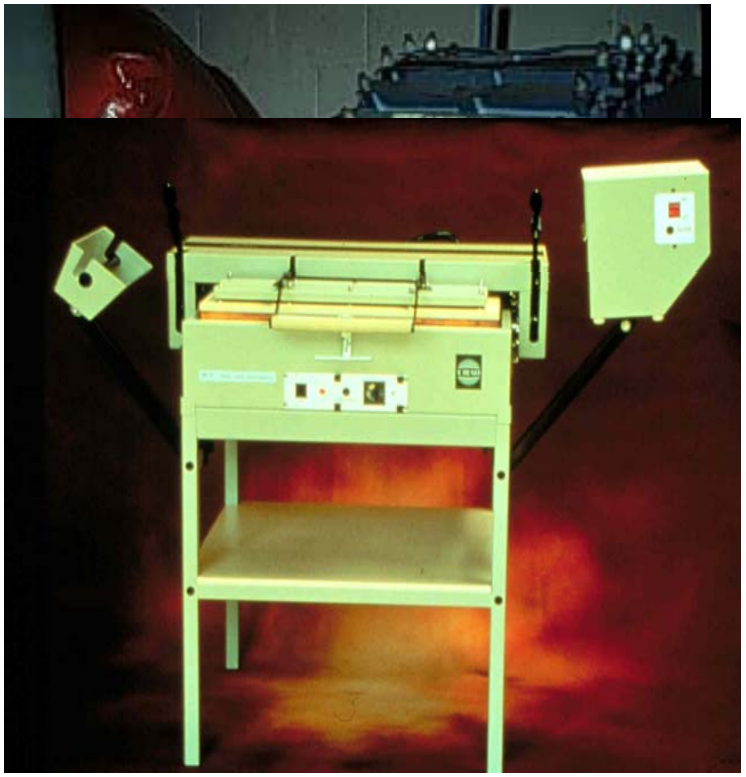
Stickiness measurement

Some measuring devices for stickiness evaluation

Credit: M. Watson

Stickiness measurement

Some measuring devices for stickiness evaluation



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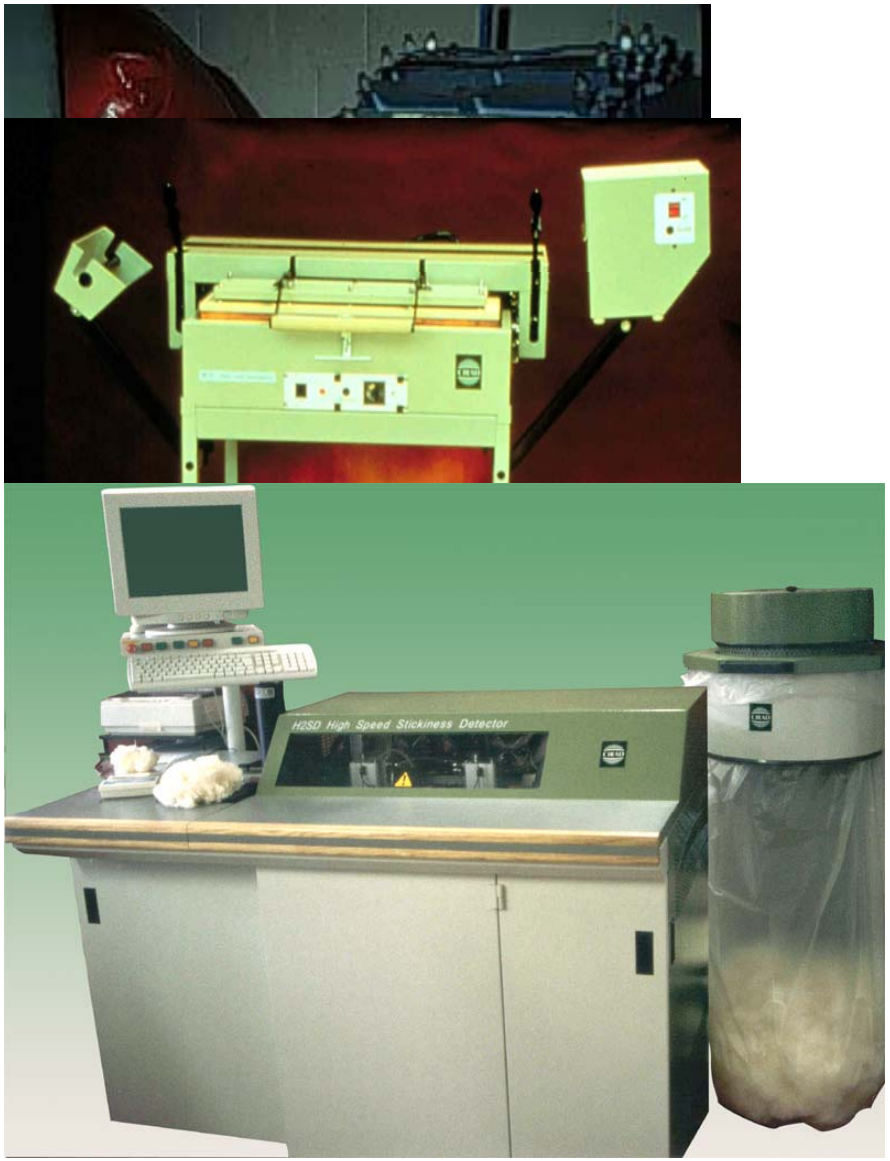
Stickiness measurement

Some measuring devices for stickiness evaluation



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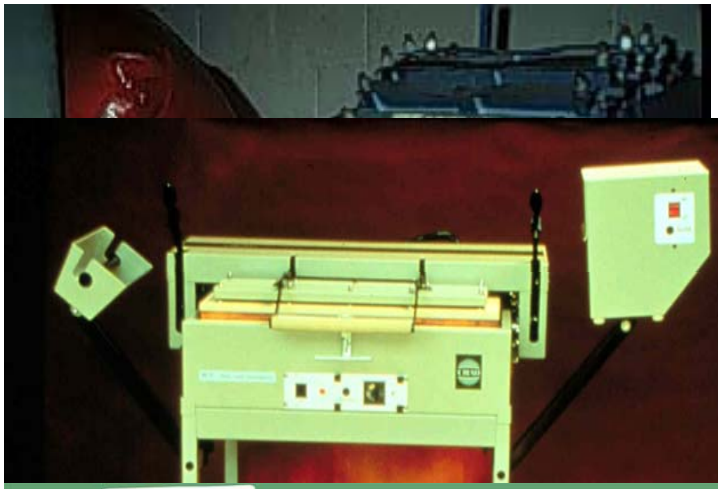
Stickiness measurement

Some measuring devices for stickiness evaluation



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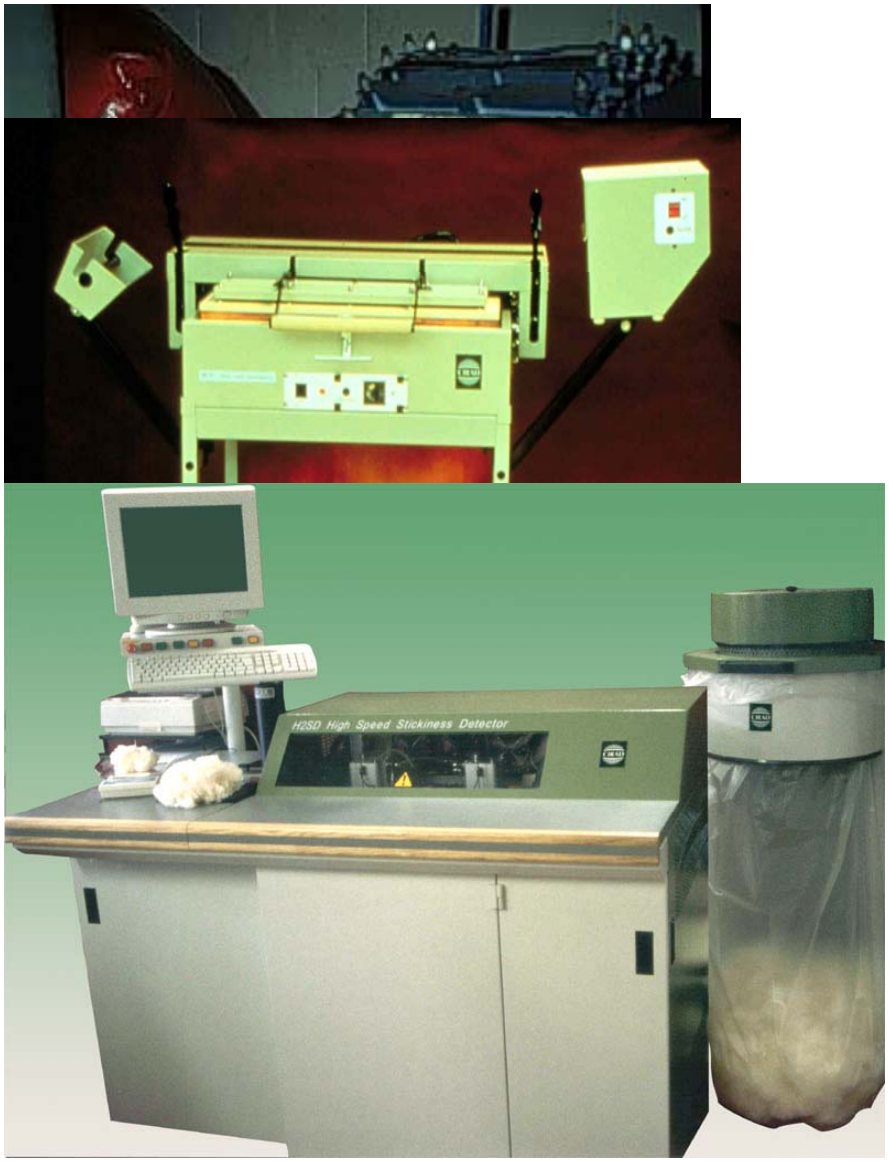
Stickiness measurement

Some measuring devices for stickiness evaluation



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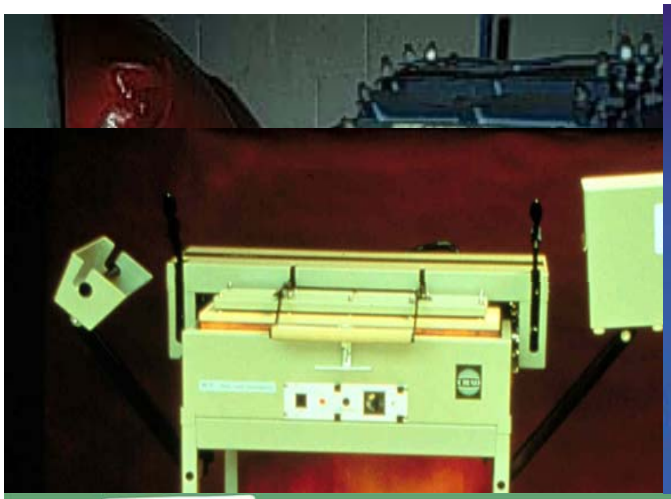
Stickiness measurement

Some measuring devices for stickiness evaluation



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Stickiness measurement

Some measuring devices for stickiness evaluation

Credit: M. Watson

Bibliography on stickiness Causes, measurements and consequences

GOURLOT J.-P.
ICCTM-ITMF, Stickiness WG

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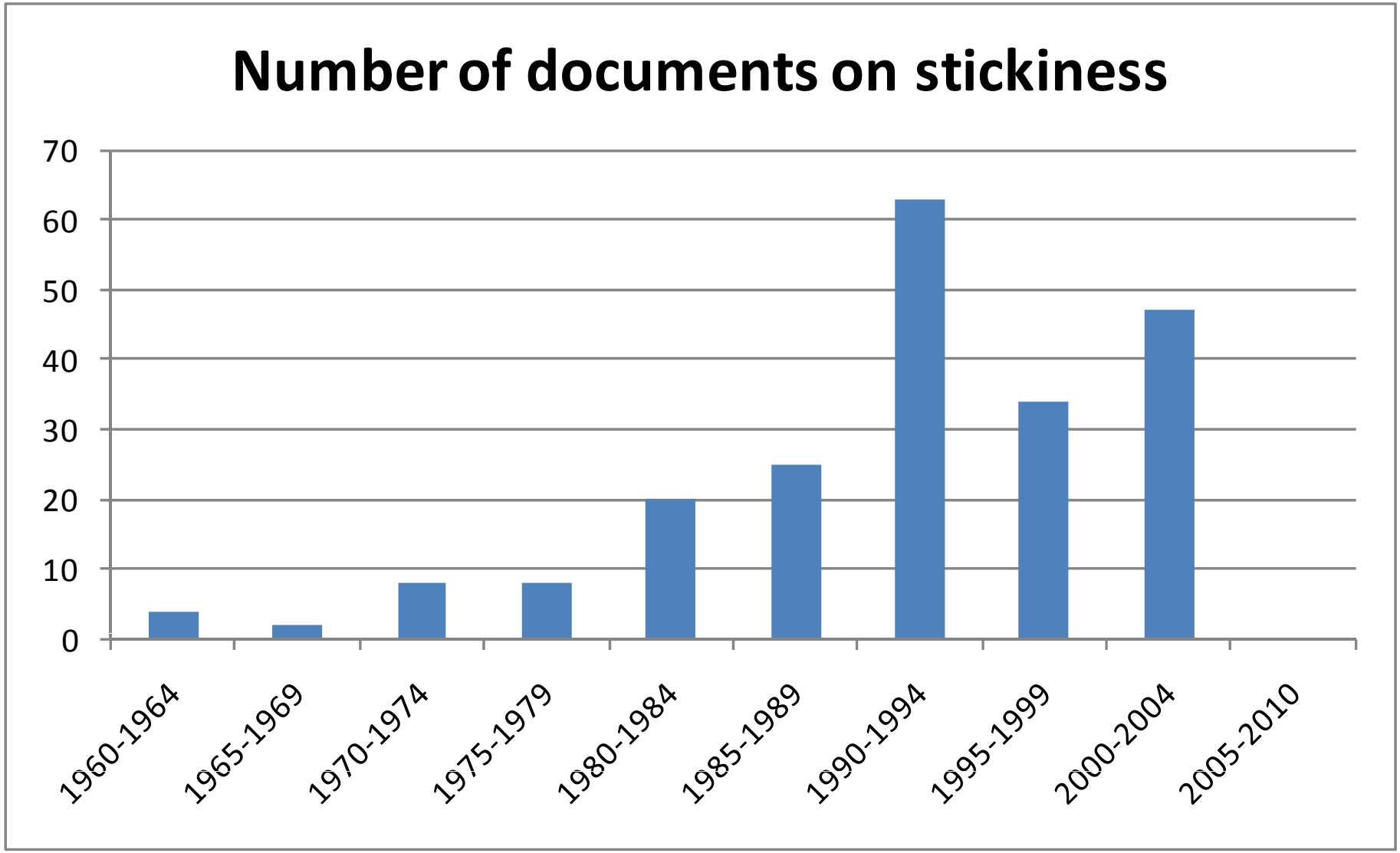
Introduction of the bibliography

- In order to allow everyone to learn more about this contamination, we decided to prepare this extract of the available literature. We retained around 214 references out of thousands of available references, focusing on the cause of stickiness, on the possible means of evaluation and/or measurement and on major consequences during fibre processing.
- The initial bibliography covers a period going from the 1960’s to 2008.

Observation



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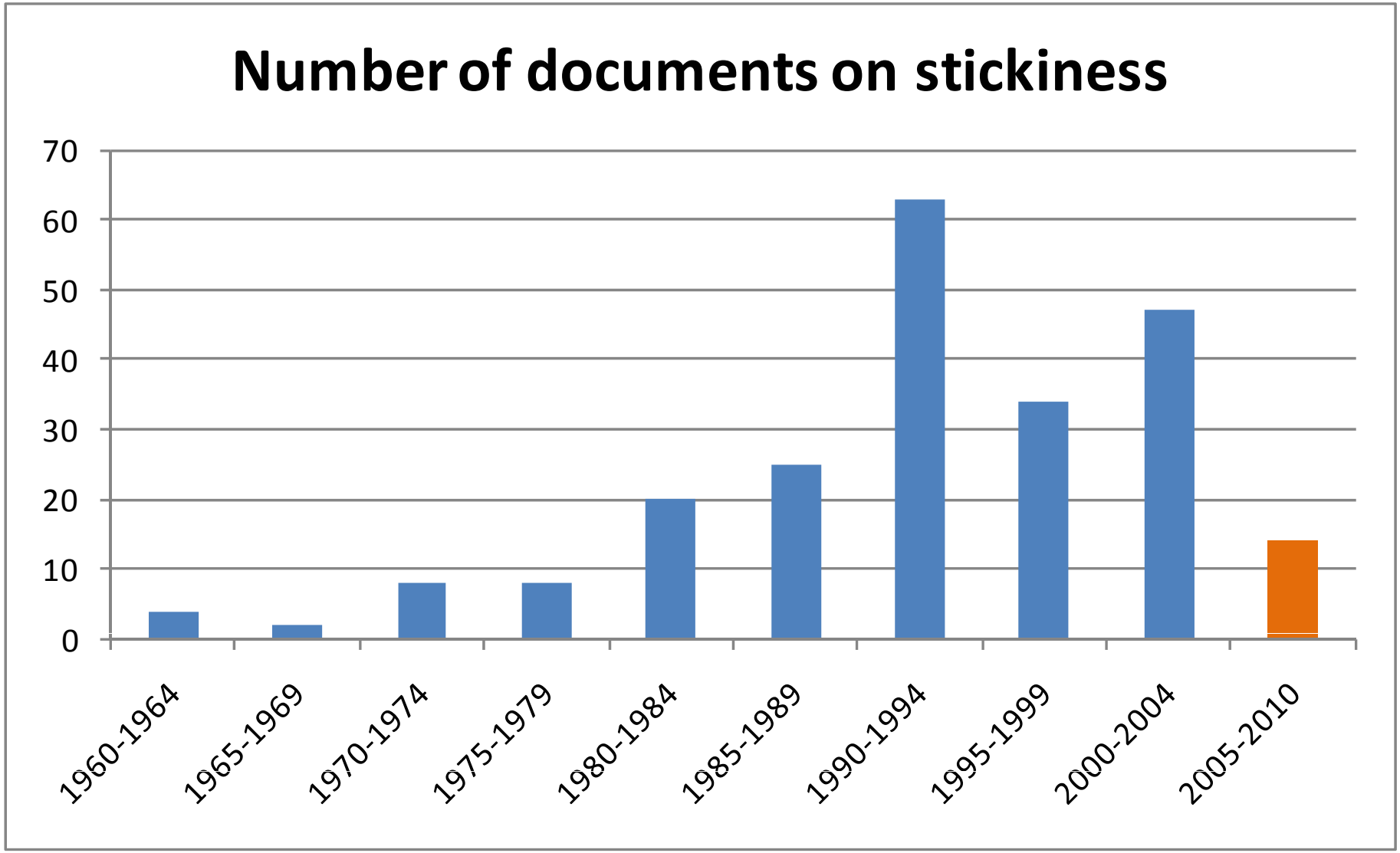

PDF file

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Thanks for attention … and suggestions

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Latest information

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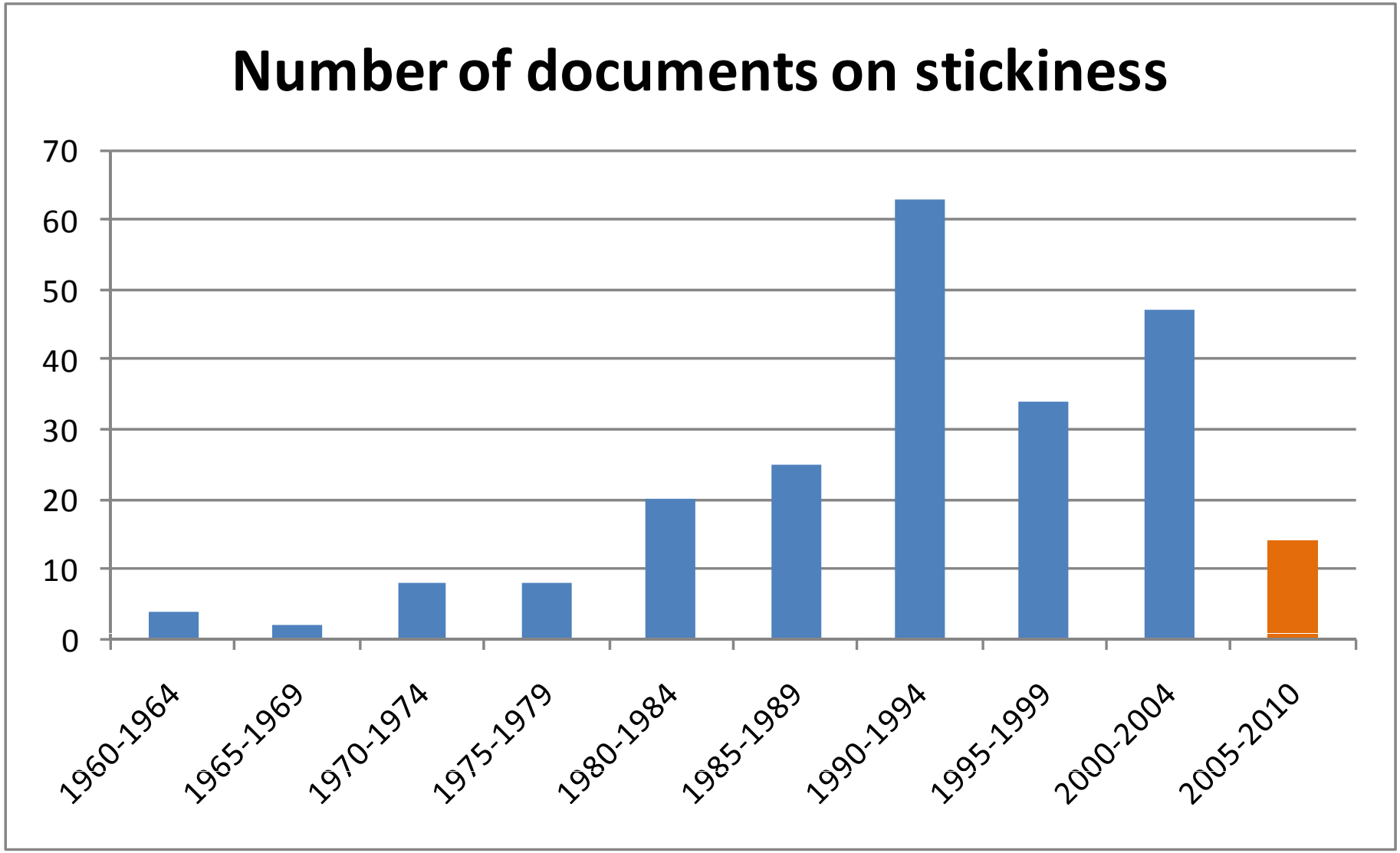
Latest information
ITMF - ICCTM 2010

- ✓SYDEL SA, Montpellier, France manufactures SCT and H2SD
- ✓Lintronics: no news since 2008 and before
- ✓KOTITI: prepared an ISO standards that currently comes to the National Standardization Bodies (AFNOR, DIN, …)
- ✓No (public) patent this year

Latest information
ITMF - ICCTM 2010

- **<u>SYDEL : Axes de développement de la nouvelle version (H2SDv2)</u>**
  - **Coût Machine**
  - **Technologies Actuelles**
  - **Réduction du consommable**
  - **Des bases solides pour les développements futurs**
    - Différentiation du type de collage Mouche Blanche / Puceron (US patents)
    - Evaluation du taux de collage par spectrométrie.
  - **Un partenariat reconduit avec le CIRAD pour vérifier le niveau de lecture et sa précision**

Observation

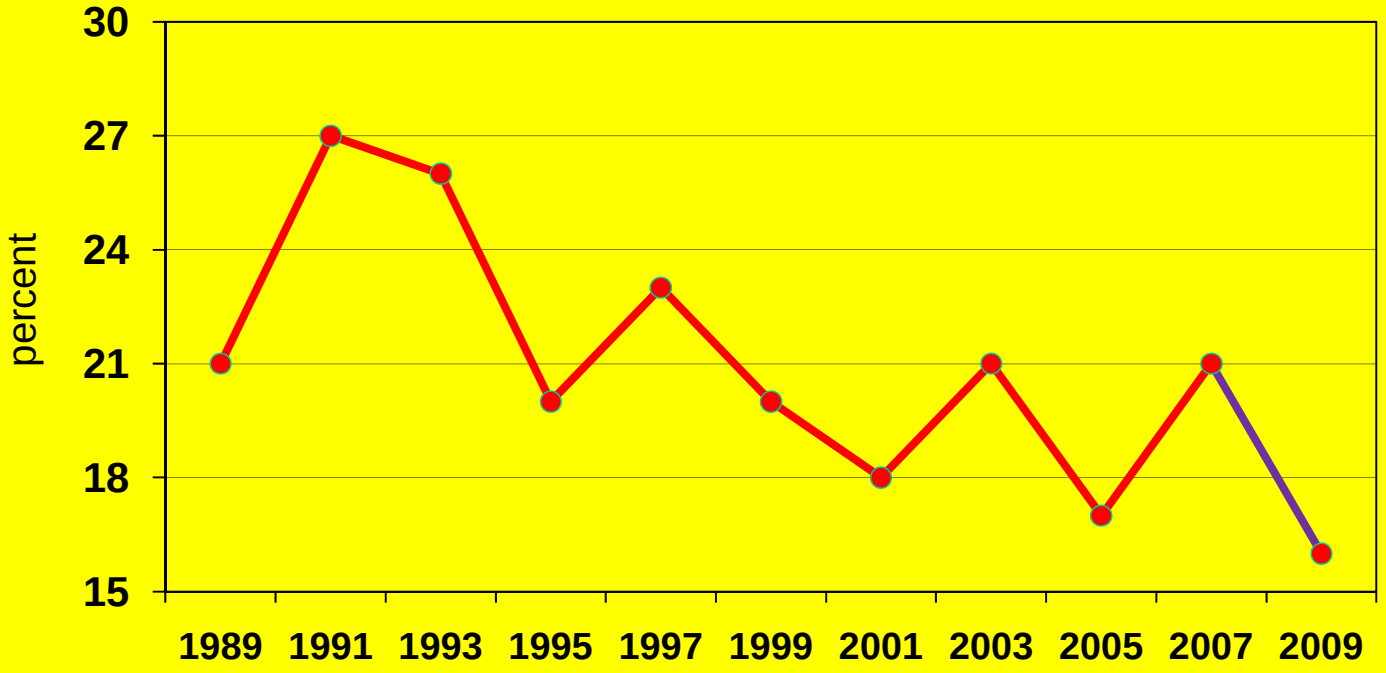


Latest information
ITMF - ICCTM 2010

ITMF

Cotton Contamination Survey 2009

Stickiness



Thanks to M. Christian Schindler, ITMF

Thank you

for

your attention

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